



## Department of Energy

Ohio Field Office

West Valley Demonstration Project

10282 Rock Springs Road

West Valley, NY 14171-9799

Recd.

Rec. Mgmt.

November 11, 2002

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November 8, 2002

Mr. Mark A. Jackson, P.E.  
Environmental Engineer, Division of Water  
New York State Department of Environmental Conservation  
Region 9  
270 Michigan Avenue  
Buffalo, NY 14203-2999

SUBJECT: Report on Process Wastewater Conveyance System Integrity, West Valley  
Demonstration Project (WVDP), State Pollutant Discharge Elimination System  
No. NY-0000973

- REFERENCES: 1) Letter (82362), M. A. Jackson to A. C. Williams, "USDOE – West Valley  
Demonstration Project, Ashford (T) Cattaraugus County, SPDES Permit  
#NY 0000973," dated March 27, 2002
- 2) MNM:0432 - 83467, A. C. Williams to M. A. Jackson, "Process Sewer  
Integrity, West Valley Demonstration Project, State Pollutant Discharge  
Elimination System (SPDES) No. NY-0000973," dated June 28, 2002
- 3) Letter (84649), M. A. Jackson to A. C. Williams, "USDOE – West Valley  
Demonstration Project, Ashford (T) Cattaraugus County, SPDES Permit  
#NY0000973," dated September 25, 2002

Dear Mr. Jackson:

The purpose of this letter is to respond to questions provided by the New York State Department of Environmental Conservation (NYSDEC) (Reference 3) regarding the June 2002 report (Reference 2) on the integrity of the sewers used to convey untreated, process (i.e., non-sanitary) wastewater at WVDP. To that end, provided as Enclosure 1 are responses to NYSDEC's comments. Additionally, it should be noted that an errata and corrigenda sheet for the June 2002 report are provided as Enclosure 2.

The request from NYSDEC to have a Professional Engineer (P.E.), registered and licensed in New York State, prepare the report documenting to proposed video survey (i.e. Comment No. 14) is an additional, unanticipated request for completing this proposed activity. Also, note that there is a commitment contained in the enclosed response to Comment Nos. 4 and 5 to further evaluate the North Plateau groundwater transfer lines and include this evaluation with the



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report on the video survey. To accommodate this request, a revised schedule to complete the integrity test and provide the requested report to NYSDEC by June 30, 2004, is proposed.

Work to perform the proposed video survey will be initiated upon receipt of approval of this proposal and revised schedule from your office.

If you have any questions regarding this matter, please contact Moira N. Maloney of my staff at (716) 942-4255.

Sincerely,

A handwritten signature in cursive script that reads "Alice C. Williams".

Alice C. Williams, Director  
West Valley Demonstration Project

- Enclosures: 1. Responses to NYSDEC Comments on Process Sewer Integrity Report
2. Errata and Corrigenda for the June 2002 Report on Integrity of Process Wastewater Conveyance Systems at the WVDP

cc: J. Krajewski, NYSDEC-Region 9, w/enc.  
M. H. Wang, NYSDEC-Albany, w/enc.  
W. J. Potts, WVNSCO, WV-50, w/o enc.  
W. M. Wierzbicki, WVNSCO, WV-50, w/enc.

MNM:0461 - 85081 - 455.1.2

MNM/brb

## ENCLOSURE 1

**Responses to NYSDEC Comments on Process Sewer Integrity Report**  
**NYSDEC letter dated September 25, 2002**  
**West Valley Demonstration Project (WVDP)**  
**State Pollutant Discharge Elimination System (SPDES) No. NY-0000973**  
**October 2002**

*Note:* To allow for efficient response, original comments from the New York State Department of Environmental Conservation (NYSDEC) are grouped together based upon similar subject matter as follows:

***Invert Elevations:***

**Comment No. 1:** The location of the gravity drain (line from U.S. Nuclear Regulatory Commission (NRC) Licensed Disposal Area (NDA) to Lagoon 2) should be shown on a map. It would be helpful if the elevation of the line inverts were indicated at various points along its path.

**Comment No. 3:** The location of Lines 02-WW-2"-2756 and 02-WW-2"-2530 should be shown on a map. It isn't clear whether 02-WW-2"-2530 is above or below grade.

Response to Comment Nos. 1 and 3:

Provided as Figure A-1 is a map showing lines with ground elevation contours. Please note that all of these are force main lines (see Enclosure 2, Errata and Corrigenda, Item No. 2 ). With respect to elevation of line inverts, precise elevations were not measured or recorded at installation. However, it is known that all of these lines are located at a minimum depth of 42 inches below grade for freeze protection purposes.

***Line Locations:***

**Comment No. 6:** The location of lines 02-WW-3-2754 and 02-WW-4-2755 should be shown on a map.

Response to Comment No. 6:

Attached is Figure A-1, which shows the location of these lines.

***Transfer line from NDA to Lagoon 2:***

**Comment No. 2:** Did you perform an integrity test this year? If so, when?

Response to Comment No.2:

Testing for calendar year 2002 has yet to be completed and is scheduled for completion by December 1, 2002.

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***Transfer lines from North Plateau groundwater wells to Lagoon 2 and LLW2:***

**Comment No. 4:** The report stated that no integrity test was done on this line (from North Plateau wells to Lagoon 2 and LLW2) because the line was constructed in the mid-1990s. Why does the Standard Operating Procedure (SOP) call for annual integrity testing on Line B (line from NDA groundwater interceptor trench to Lagoon 2) but not on this line, given that this line has maximum flow of 25 gpm and Line B has 500 gpd?

**Comment No. 5:** Since these lines will be in use for the foreseeable future, they should be included in the schedule for integrity testing.

Response to Comment Nos. 4 and 5:

Integrity testing of these lines was performed prior to operational commissioning in the mid-1990s. These lines are also relatively new compared to the NDA transfer line, which includes sections that were installed in the 1970s.

As indicated in the errata and corrigenda (Enclosure 2), the transfer lines for the North Plateau groundwater wells are constructed of polyethylene. Unlike other materials, polyethylene tubing can be laid out in relatively long, continuous runs, which reduces the number of joint connections, where failure and/or exfiltration is most likely to occur.

The line for transferring groundwater from the North Plateau to the LLW2 and Lagoon 2 is located within the areal confines of the North Plateau groundwater plume. Should the integrity of this line become compromised, groundwater from this line would simply re-infiltrate into the existing plume.

For these reasons, testing of this line was not assigned a high priority. To ensure worker safety, non-intrusive evaluation methods for these lines will be given preferential consideration. Methods for future non-intrusive evaluation of these lines with existing equipment will be assessed and included in the report from the Professional Engineer requested in Comment No. 14.

***Transfer lines between Lagoon 2 and LLW2:***

**Comment No. 7:** Although integrity testing is not necessary now, a schedule should be developed for future testing.

**Comment No. 8:** How often does the operator conduct this visual inspection of the vault?

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Response to Comment Nos. 7 and 8:

These lines, which were installed in 1997, are newer than the transfer lines for the North Plateau groundwater wells. Since these lines are relatively new, integrity testing has not been performed since pre-operational commissioning. With this line located within a concrete Trenwa, it is believed that the current practice of visual observation is a better alternative to more intrusive testing, which could greatly increase the risk of worker exposure to radiation hazards.

These sloped lines are heat traced with water resistant insulation. In the event that the integrity of one or both of these lines were compromised, the liquid should flow along the pipe to the lowest point within the Trenwa near Lagoon 2. Currently these lines are observed several times each year during the performance of pump surveillance. As an additional measure, routine annual visual observation of these lines at the lowest point, within the vault, will be added to the schedule.

Also, the earthen embankment on which these lines are located is observed twice per month for visual indications of groundwater seepage. To date, there has been no indication of seepage attributable to these lines.

***Out-of-Service Lines 8P-11 and 15WW-929:***

**Comment No. 9:** The report indicates that laterals 8P-11 and 15WW-929 were taken out of service. Please describe how these lines were taken out of service, and whether they can be put back into service in the future.

**Comment No. 10:** What are the diameters of the out of service lines, 8P-11 and 15WW-929?

Response to Comment Nos. 9 and 10:

Line 8P-11 is a 2-inch diameter pipe and Line 15WW-929 is a 3-inch diameter pipe. Both lines were physically disconnected from their respective sources, pumps, etc., and capped. These lines were also flushed with clean water prior to deactivation. Record drawings for these lines (Drawing Nos. 15A-A-72 and 8R-A-1) include annotations to prevent use of these lines. As such, these lines are administratively controlled and engineered to prevent being put back into service.

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***Transfer Line 15-WW-570 and Line 15-WW-843:***

**Comment No. 11: With regard to Line 15-WW-570 and Line 15-WW-843, during storm events or in the event of process overruns has the capacity of the lines ever been exceeded? If so, where would the excess water go?**

Response to Comment No. 11:

Since 1982 when the U.S. DOE assumed operational control of this facility, there have been no reported instances where there has been a release to the environment due to exceedance of the hydraulic capacity of these lines and the associated collection, conveyance, and storage system. Within this conveyance system, that includes these lines, overflow capacity is available at the lowest point, a concrete pipe trench located in the Utility Room, prior to exiting the building footprint.

Also, there are several notable design practices employed for this process sewer that minimize the potential sources of inflow and infiltration that are commonly associated with conventional sanitary sewers. First, unlike sanitary sewers, these lines have virtually no manhole/pipe connections, which are frequent sources for infiltration at the pipe/manhole connection joints and inflow through the holes in the manhole covers. Secondly, the pipe joints for these lines were sealed to minimize infiltration by placing packing at the pipe bottom, fitting the pipe sections together, then pouring molten lead around the remaining portions of the pipe joint connections.

It should also be noted that there are very few dedicated sources of storm water into this system. These minor sources currently include the roof drains in the area of the former Solvent Storage Terrace. However, there have been no reported surges of storm event related flow or volume that exceed the hydraulic capacity of the system. Also, there have been no reported sudden loadings of muddy/turbid water or sediment, such as from infiltration or breakthrough, that would indicate potential failure of integrity along any portion of this system.

***Video Survey of Lines from Process Buildings to Interceptors:***

**Comment No. 12: The particular reaches to be evaluated, and the lengths of same should be specified, both verbally and on a detailed map. The specification of surveillance of 100 feet to 1000 feet is unnecessarily vague. We appreciate that you may encounter particular constraints that will necessitate a field decision with regard to televising, but would like you to define the specific goals up front.**

**Comment No. 13: Of the reaches to be evaluated, which are encased in concrete and which are not? We would prefer that both scenarios should be evaluated, as**

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**you indicate that 60% of the underground lines are encased in concrete and 40% are not.**

**Comment No. 14: The dates specified in the schedule are acceptable. Please ensure that the final report (completion date January 31, 2004) is prepared and signed by a professional engineer currently registered and licensed in New York State.**

Response to Comment Nos. 12, 13, and 14:

Both reaches encased in concrete and reaches not encased in concrete are targeted for the video survey. A summary description of those reaches that are targeted for video survey is as follows:

1. Line 15-WW-569. This is the main trunk of the process sewer. Virtually all of the wastewater flow destined for the interceptors from the process buildings is conveyed through this line and as such is the most heavily utilized. A total length of 280 feet of this 6-inch diameter line is potentially accessible and targeted for video survey. Approximately 90 linear feet of this total (i.e., 32 %) is encased in concrete as it is located under the Utility Room;
2. Line 15-WWW-843. A total length of 90 feet of 6 inch-diameter section of this line is potentially accessible and targeted for video survey. This section is not encased in concrete;
3. Line 15-WW-570. A total length of 140 feet of 4-inch diameter section of this line is potentially accessible and targeted for video survey. This section is not encased in concrete.

As indicated by the above descriptions, the target for this activity is to video survey a total length that is within 5% of 510 total linear feet of sewer line identified above. This may be subject to change in the field resulting from unforeseen, limiting field conditions (e.g., non-negotiable pipe bends, radiological contamination, etc.). The relative locations targeted for this video survey are shown on Figure A-2.

The request from NYSDEC to have a professional engineer, registered and licensed in New York State prepare the report is an additional, unanticipated request for completing the proposed activity. To accommodate this additional request and commitment contained in the response to Comments No. 4 and 5 regarding the North Plateau transfer lines, a revised schedule to complete the integrity test and provide the requested report by May 31, 2004, is proposed.

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### *General Comments:*

**Comment No. 15: Beyond this study, it appears that enhancements could be made to ongoing evaluations of the integrity of conveyances at this site. A schedule should be developed for integrity testing of all lines. In addition, the methods, direct or indirect, for testing should be described.**

Response to Comment No. 15:

As indicated in Section IV of the original report, there are radiological hazards to workers and other technical or physical constraints which make evaluation of certain lines technically impracticable. The submitted report, in conjunction with this response, identifies all lines where evaluation is already performed and those lines where evaluation is likely feasible and will be attempted. To address changes as site cleanup progresses, an updated evaluation will be completed at a minimum frequency of once every five years to reassess integrity of the transfer lines and identify additional lines that may be newly amenable for potential initial evaluation.

**Comment No. 16: If there have been any leaks or releases in the past during either DOE or NFS control, this information should be made available. In the future, any releases from these lines should be reported to the Department.**

Response to Comment 16:

All known releases from these lines during the period of DOE operational control have been and will continue to be reported to the NYSDEC in accordance with the terms of the SPDES permit. A review of information on releases during NFS control was also performed and Geoprobe investigation results near these lines were provided to NYSDEC as part of the RCRA Facility Investigations under the RCRA 3008(h) Order on Consent.



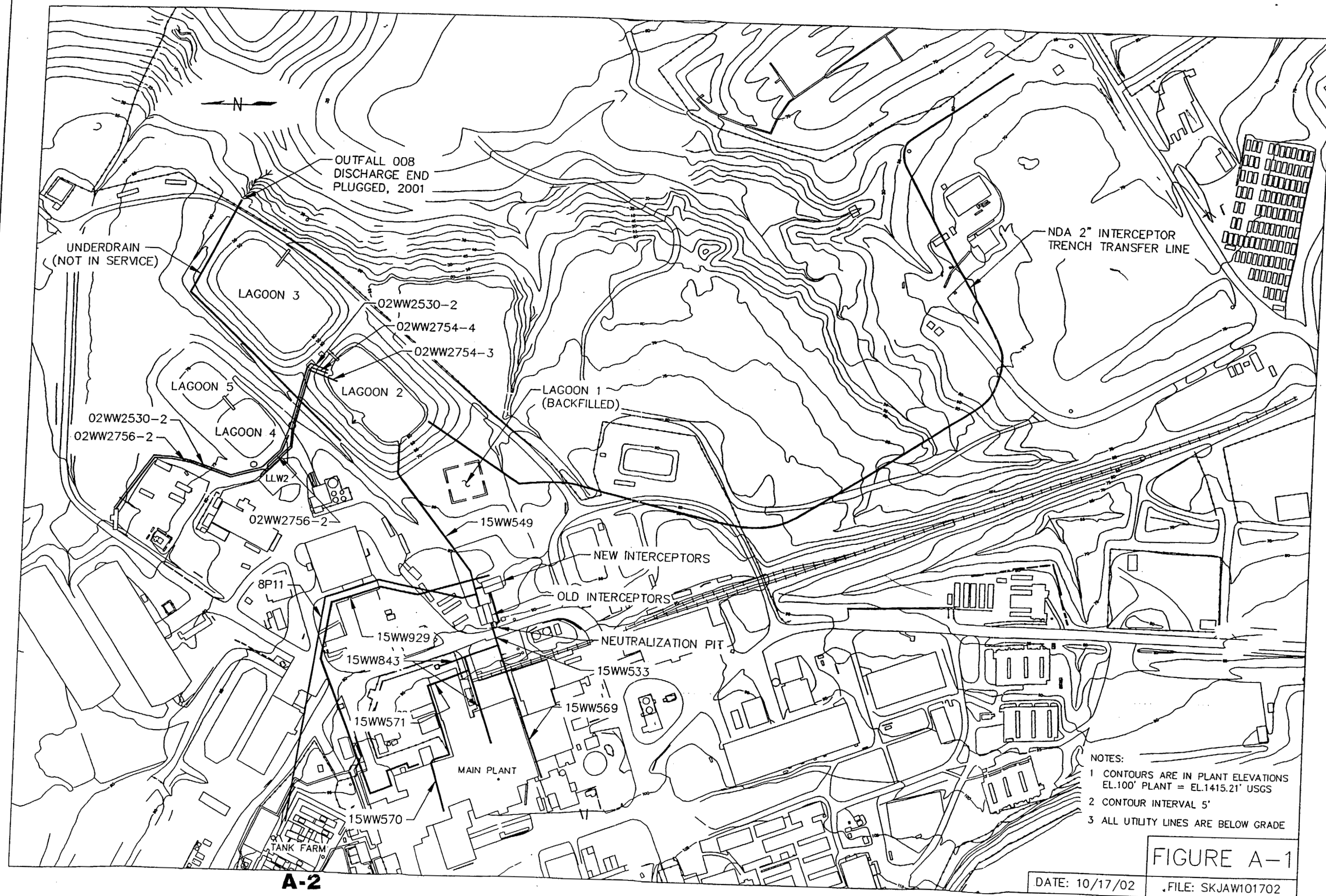
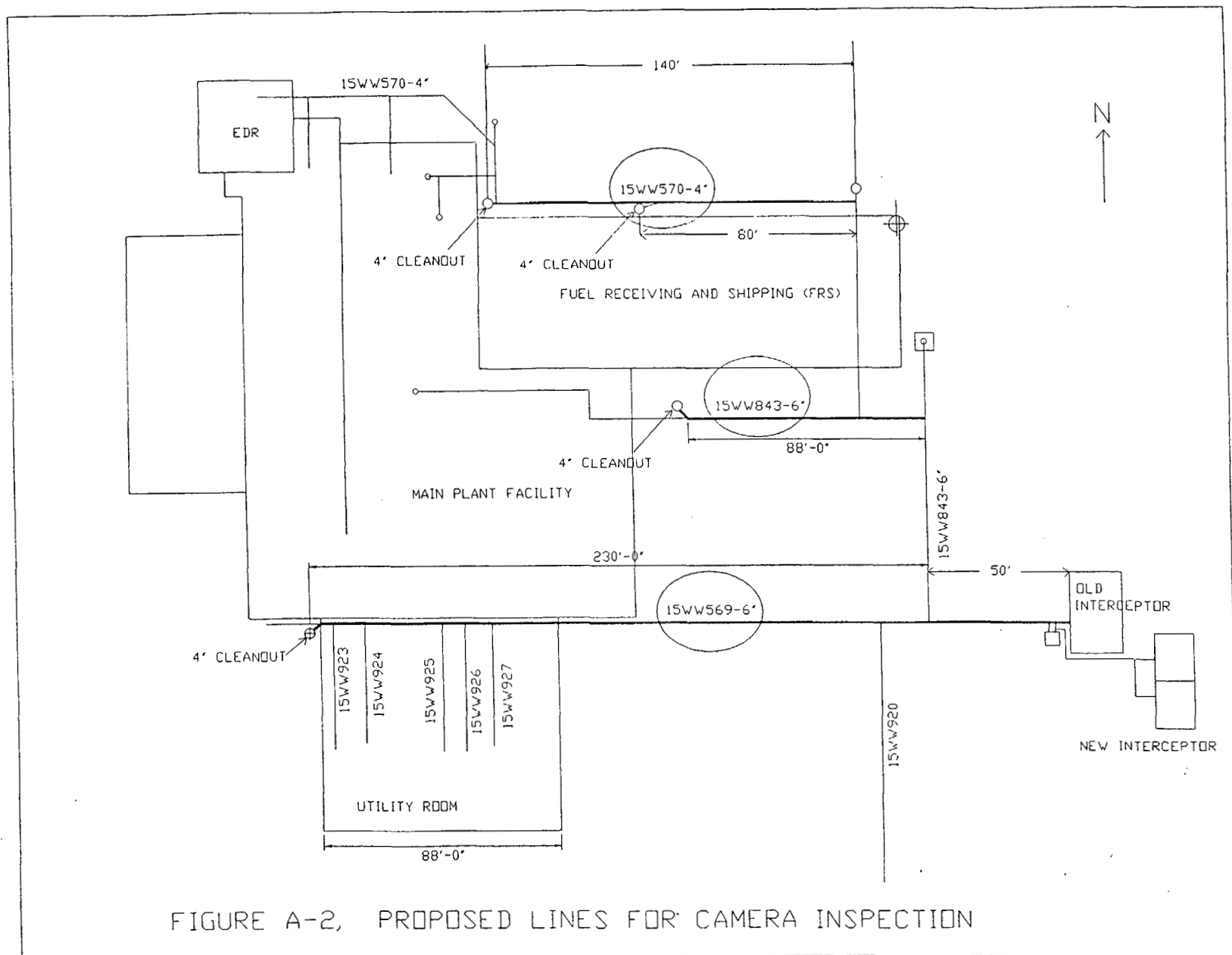


FIGURE A-1

DATE: 10/17/02

FILE: SKJAW101702



## **ENCLOSURE 2**

### **Errata and Corrigenda for the June 2002 Report on Integrity of Process Wastewater Conveyance Systems at the WVDP October 2002**

1. Section II.B., NDA Interceptor Trench Transfer Line (Description). A section of the NDA Interceptor Trench Transfer Line is identified as PVC construction. This section of line is constructed of black polyethylene;
2. Section II.B., NDA Interceptor Trench Transfer Line (Description). It is stated that the NDA Interceptor Trench Transfer Line gravity drains to Lagoon 2. This line is a pumped force main;
3. Section II.C., Lines from North Plateau Groundwater Wells to Lagoon 2 and the LLW2. It is stated that Lines 02-WW-2"-2756 and 02-WW-2"-2530 constructed of PVC pipe. These lines are constructed of polyethylene; and
4. Section II.E., Line from Interceptors to Lagoon 2 (Description). It is stated that line 15-WW-549 is constructed of stainless steel and PVC. This line is constructed of stainless steel and polyethylene.

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J. P. Bleech	WV-50
W. J. Potts	WV-VH3
W. M. Wierzbicki	WV-50